Amendments to the Specification:

Please amend the paragraph beginning on Page 1, line 10 as follows:

Joint demodulation is described, for example, in U.S. Patent 5,506,861 to Bottomley entitled *System and Method for Joint Demodulation of CDMA Signals*; U.S. Patent 5,640,432 to Wales entitled *Co-Channel Interference Suppression System*; and U.S. Patent Application Serial No. 09/143,821 to Hafeez et al., entitled *Methods and Systems for Reducing Co-Channel Interference Using Multiple Timings for a Received Signal* filed on August 31, 1998 (now U.S. Patent 6,304,618 to Hafeez et al.), and assigned to the assignee of the present invention. Joint demodulation also is described in the following publications: Hafeez et al., entitled *Co-Channel Interference Cancellation for D-AMPS Handsets*, Proceedings of the 49th IEEE Vehicular Technology Conference, May 1999, pp. 1026-1031; Murata et al., entitled *Joint Frequency Offset and Delay Profile Estimation Technique for Nonlinear Co-channel Interference Canceller*, Proceedings of the PIMRC, November 1998, pp. 486-490; and Lo et al., entitled *Adaptive Equalization and Interference Cancellation for Wireless Communication Systems*, IEEE Transactions on Communications, Vol. 47, No. 4, April 1999, pp. 538-545. The disclosures of all of the above-cited patents, patent application and publications are hereby incorporated herein by reference in their entirety.

Please amend the paragraph beginning on Page 6, line 4 as follows:

Referring now to Figure 3, a block diagram of an embodiment of a detection processor **112'** of Figure 2 is shown. The detection processor **112'** can detect the desired signal using a conventional demodulation technique. Conventional demodulation can include differential detection as described in Pages 171-178 of the textbook to Proakis entitled *Digital Communications, Second Edition*, 1989; an equalizer that demodulates the desired signal only, such as is described in the publication to Jamal et al. entitled *Adaptive MLSE Performance on the D-AMPS 1900 Channel*, IEEE Transactions on Vehicular Technology, Vol. 46, No. 3, August 1997, pp. 634-641; and/or a semi-blind joint demodulator that demodulates both a desired signal and at least one interfering signal, such as was described in the above-cited publication to Hafeez et al. and the above-cited ~~patent application~~ U.S. Patent to Hafeez et al. It will be understood that semi-blind joint demodulation is not considered joint demodulation according to the invention because semi-blind joint demodulation does

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not use an estimate of an interfering signal's synchronization sequence. The detection processor **112'** also may comprise a multipass detection processor that performs demodulation and decoding using multiple iterative passes of demodulation and detection. See Application Serial No. 09/201,623 to Khayrallah et al. entitled *Adaptive Channel Characterization using Decoded Symbols*, filed November 30, 1998 (now U.S. Patent 6,320,919 to Khayrallah et al.). Other detection processors also may be used.

Please amend the paragraph beginning on Page 8, line 25 as follows:

A first technique estimates the interfering signal's composite channel response. This approach can use a conventional least squares estimation approach using the found synchronization word of the interfering signal. A second technique can assume that there is one medium ray for the interfering signal and estimate its value and delay. This is similar to the approach described in the above-cited U.S. Patent ~~Application~~ to Hafeez et al., except that the interfering signal synchronization word can be used to estimate the delay of the medium response. A third technique according to the invention can generalize the above two techniques. In particular, the number of medium response rays is estimated and for each ray, and a delay and a coefficient value are obtained.

Please amend the paragraph beginning on Page 9, line 19 as follows:

Alternatively, it is known that for the desired signal, a decision can be made whether to use one or two composite channel taps by comparing the two metric values $(_1$ and $(_2$ under the assumption that $(_1$ models the desired signal with one channel tap and $(_2$ models the desired signal with two channel taps. These two metrics are defined as:

$$\gamma_1 = \sum_i |y(i) - c(0)s(i)|^2 \text{, and} \qquad (1)$$

$$\gamma_2 = \sum_i |y(i) - c(0)s(i) - c(1)s(i-1)|^2 \text{.} \qquad (2)$$

Two taps are selected when $(_2 < (_1 - *$, where $*$ is some positive threshold value. See U.S. Application Serial No. 08/897,309, filed July 21, 1997 (now U.S. Patent 6,333,953 to Bottomley et al.), entitled *System and Methods for Selecting an Appropriate Detection Technique in a Radiocommunication System*.

Please amend the paragraph beginning on Page 10, line 29 as follows:

Finally, joint demodulation **120/120'** will be described in detail. A preferred embodiment of joint demodulation uses a Viterbi algorithm to jointly estimate the desired and interfering signal symbol sequences, similar to that described in the above-cited U.S. Patent ~~Application~~ to Hafeez et al. However, in the present invention, the interfering signal's synchronization sequence is known and can be used as known symbols within the detection process even if it is offset from the desired signal's synchronization sequence. This can be accomplished, for example, by constraining the demodulation trellis to only allow the known interfering signal's synchronization symbols in the demodulation process. Additionally, the interfering signal's channel estimate generally is more reliable than in the semi-blind joint demodulation receiver, and this channel can be adaptively updated during demodulation. In an alternative embodiment, the joint demodulation can take advantage of the first detection of the desired signal and use this information together with joint demodulation. An example of how this information might be used alone (without joint demodulation) is described in the above-cited <u>U.S. Patent to Khayrallah et al.</u> ~~Application Serial No. 09/201,623.~~